

COASTAL CONSERVANCY

Staff Recommendation

August 2, 2012

**WHISTLESTOP LAGOON ENHANCEMENT PROJECT**

Project No. 12-022-01

Project Manager: Rachel Couch

**RECOMMENDED ACTION:** Authorization to disburse up to \$404,162 to the Elkhorn Slough Foundation to prepare final engineering and bid documents, reconstruct a damaged levee, and relocate and expand a dock at the Whistlestop Lagoon in Elkhorn Slough, Monterey County.

**LOCATION:** Elkhorn Slough, Monterey County

**PROGRAM CATEGORY:** Resource Enhancement

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**EXHIBITS**

Exhibit 1: [Project Location and Site Map](#)

Exhibit 2: [Photos and Figures](#)

Exhibit 3: [Mitigated Negative Declaration](#)

Exhibit 4: [Project Letters](#)

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**RESOLUTION AND FINDINGS:**

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31251-31270 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes disbursement of an amount not to exceed \$404,162 (four hundred four thousand one hundred sixty-two dollars) to the Elkhorn Slough Foundation (ESF) to prepare final engineering and bid documents, reconstruct a damaged levee, and relocate and expand a dock at the Whistlestop Lagoon in Elkhorn Slough, as shown on Exhibit 1 to the accompanying staff recommendation. This authorization is subject to the following condition:

1. Prior to the disbursement of any Conservancy funds, ESF shall submit for review and approval of the Executive Officer of the Conservancy:
    - a. A work program, schedule and budget and any contractors to be employed for these tasks and evidence that ESF can provide all remaining funds needed to complete the final design documents and construction.
    - b. Evidence that all necessary permits and approvals have been obtained.
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c. A signing plan for the project acknowledging Conservancy funding.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed project is consistent with the Conservancy Project Selection Criteria and Guidelines, last updated on November 10, 2011.
2. The proposed authorization is consistent with the purposes and objectives of Chapters 6 of Division 21 of the Public Resources Code, regarding enhancement of coastal resources.
3. The Elkhorn Slough has been identified in the Certified Local Coastal Program of Monterey County as environmentally sensitive habitat area that requires public action to resolve existing resource protection problems.
4. Elkhorn Slough Foundation is a nonprofit organization existing under Section 501(c)(3) of the U.S. Internal Revenue Code, and whose purposes are consistent with Division 21 of the Public Resources Code.
5. As a responsible agency, the Conservancy independently reviewed and considered the information contained in the California Department of Fish and Game’s Initial Study/Mitigated Negative Declaration for the Whistlestop Levee Repair and Public Access Improvement Project, approved on June 4, 2012, and finds that the proposed project, as designed and mitigated, will not have a significant adverse effect on the environment.”

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**PROJECT SUMMARY:**

Staff is recommending that the Conservancy provide up to \$404,162 to the Elkhorn Slough Foundation (ESF) to prepare final engineering and bid documents, reconstruct a damaged levee, and relocate and expand a dock at the Whistlestop Lagoon in Elkhorn Slough, Monterey County (Exhibit 1). ESF in partnership with the California Department of Fish and Game (CDFG) and the Elkhorn Slough National Estuarine Research Reserve (ESNERR), proposes to complete final engineering documents and replace up to three failed culverts in the 325-foot Whistlestop levee with a 15 to 20 foot long bridge to improve water quality, fish passage, and trail safety for recreational users in the area. ESF also proposes to relocate and expand an existing dock that extends off the Whistlestop levee to deeper water to reduce disturbance to mudflat habitat at low tides.

Whistlestop Lagoon is a 13-acre tidal environment located on the east side of Elkhorn Slough, in the northern portion of the Parsons Slough Complex. The area includes approximately 13 acres of subtidal and intertidal mudflat habitats and one-half acre of fringe marsh habitat. The land is owned by the California Department of Fish and Game. The site was originally a salt marsh that was diked for agriculture and subsequently subsided before tidal flow was returned in the 1980s. Today this area is a subtidal lagoon with a narrow fringing salt marsh separated from Parsons Slough by a levee embankment and hydrologically connected to Parsons Slough by three culverts. The largest culvert has collapsed, destabilizing the levee and creating hazardous conditions on the trail across its top due to erosion and the development of sinkholes. This

culvert was subsequently capped to slow erosion of the levee, which led to additional tidal muting, a substantial reduction in the tidal range (to only 20 centimeters), and a significant decrease in tidal flow into the lagoon. Ultimately this resulted in a pronounced drop in dissolved oxygen concentrations, anoxic conditions, and a fish kill, until the cap was removed in August 2011. As a result of the muted tidal regime, when the levee is overtopped during extreme spring tides and spring tides with storm surges, the resulting difference in the water levels leads to a cascade that further erodes the levee. This typically happens several times a year.

The levee serves as a trail to the ESNERR's popular Hummingbird Island and provides ESNERR's only public access to the Slough's main channel (Exhibit 1). The trail is periodically closed when sinkholes form over the failing culverts or when extreme high tides erode the trail.

The goal of the proposed project is to restore estuarine ecosystem health in Whistlestop Lagoon, which currently provides habitat for benthic invertebrates, fish (including halibut, leopard sharks, and bat rays), egrets, and occasional southern sea otters. Two primary objectives of the project are to increase tidal range and circulation in the lagoon without contributing to tidal scour in other parts of Elkhorn Slough and improve habitat connectivity and fish and wildlife access between Whistlestop Lagoon and the adjacent Parsons Slough Complex.

Replacing the culverts with a bridge would improve water quality in Whistlestop Lagoon by increasing tidal exchange with the rest of the estuary. This opening would also improve passage for fish and wildlife between the lagoon and the adjacent habitat in Parsons Complex. Rock placed under the bridge would provide additional hard substrate habitat to support native Olympia oysters (in sharp decline regionally), and would minimize the potential for tidal scour and erosion. The size of the opening in the levee would increase by approximately a factor of ten, which will easily accommodate peak flows; as a result, water levels on both sides of the levee will be virtually identical under all conditions.

Replacing the culverts would also improve safety of the public who use the levee as a recreational trail and ESNERR staff who use the access road for habitat maintenance projects. The ESNERR is an educational facility that reaches 40,000 people each year. This project will maintain public access to Hummingbird Island for visitors, including school field trips, teacher trainings, ESNERR staff, and researchers from a wide variety of institutions, as well as increase public education about the need for coastal resource enhancement and collaboration to solve complex environmental issues. Finally, the proposed improvements to the levee would minimize routine maintenance activities currently required to ensure the culverts function correctly. Without action, the Whistlestop levee is expected to fail completely, closing public access to Hummingbird Island.

An existing 50-foot floating dock currently extends off the southeast corner of the Whistlestop levee embankment, and is used by ESNERR staff for water access to Parsons Slough. The dock is currently built on a shallow mudflat at an elevation of between mean low water (MLW) and the mean tide line (MTL), so most vessels accessing the dock disturb existing mudflat habitat in the area except at the highest of tides. Relocating and extending the dock to a deeper, subtidal channel, at or below mean lower low water (MLLW), would reduce disturbance to mudflat habitat at low tides when vessels access the dock.

The proposed project would replace the failing culvert system with either a large (15' x 9') box culvert or steel and wooden pedestrian bridge, depending on cost estimates to be determined

during the bid process. The new bridge or culvert would be located on the western side of the levee, outside of the primary deep-water channel connecting Whistlestop Lagoon to Parsons Slough, to minimize the potential for tidal erosion during ebb tides. Bank erosion near the bridge or culvert will be controlled through the use of armoring including retaining/wing walls and/or rock riprap. The rock armor is designed to extend approximately 15 feet upstream and downstream of the new span. It will also extend laterally to protect the sides of the levee near the opening.

According to hydraulic modeling recently completed for the Parsons Sill project by the engineering firm URS (URS 2011), this new infrastructure would increase tidal flow into Whistlestop without contributing significantly to overall tidal volume and erosion in other parts of Elkhorn Slough. However, if post-construction hydrologic and engineering analysis determine that the removal of a portion of the levee is having an unanticipated adverse effect on the larger estuary (i.e., the tidal prism of Whistlestop Lagoon is increased significantly, contributing to high ebb tide current velocities and tidal scour and sediment export from Elkhorn Slough), ESNERR may choose to insert flash boards under the bridge in the future. The sill is not included as part of the proposed project. If implemented, the final elevation of the channel under the bridge with the sill would be up to 3 feet above MLLW. At this elevation (the most restrictive channel height considered in preliminary analysis), the opening in the levee would provide more than a 10-fold increase in tidal flushing compared to existing conditions.

The proposed project will be led by ESF in partnership with ESNERR, a partnership that is now 30 years old. ESF is a community non-profit and, with the Conservancy, serves as the fiscal agent for receiving and administering federal grant funding from the National Oceanic and Atmospheric Administration (NOAA) for the support of ESNERR staff. ESNERR, a member of the national network of estuarine research reserves, is a partnership between NOAA and CDFG. Successful restoration projects have resulted from this partnership including restoration of 24 acres of wetlands at Azevedo Ranch and installation of the Parsons Slough Sill to reduce tidal scour and sediment loss in the slough.

**Site Description:** Elkhorn Slough, an estuary extending inland for seven miles from the midpoint of Monterey Bay in Central California, provides extraordinary biological diversity and recreational opportunities. The estuary contains many distinctive habitat types including subtidal channels, tidal creeks, mudflats, salt marshes, and tidal brackish marshes. These habitats provide a rich ecosystem essential for over 340 bird species, 550 marine invertebrate, and 102 fish species. Elkhorn Slough is an important nursery for commercial and recreational fish and a premier migratory stopover for birds. Estuaries like Elkhorn Slough are among the most threatened ecosystems in California, and as a result, a disproportionate number of rare, threatened, and endangered species reside in these areas. In the Elkhorn Slough watershed, two dozen species are included in these categories. The estuary also provides many beneficial human uses such as recreational boating, hiking, and bird watching. Moreover, the coastal wetlands minimize shoreline erosion and filter polluted waters.

The Elkhorn Slough estuary hosts the greatest extent of tidal marshes on the 600-mile stretch of coast between San Francisco and Mexico, supporting remarkable biological diversity and serving as an important breeding area for many marine species including sharks, rays and commercially harvested flatfish. Elkhorn Slough has been recognized as a Globally Important Bird Area by the National Audubon Society and a Western Hemisphere Shorebird Reserve Network by the

Manomet Center for Conservation Sciences. Portions of the slough are designated a State Ecological Reserve and Wildlife Management Area and a Marine Protected Area.

Over the past 150 years, human actions have altered the tidal, freshwater, and sediment processes that are essential to support and sustain Elkhorn Slough's estuarine habitats. Large areas of the Elkhorn Slough tidal marshes were diked and drained for agricultural use in the 19th century. Decades later, these dikes began to fail, reintroducing tidal waters to the reclaimed wetlands. However, the act of draining wetlands leads to sediment compaction and land subsidence, which makes the substrate too low and wet to support salt marsh. Approximately 50 percent or 1,000 acres of salt marsh habitat was lost between 1870 and 2003 due to human impacts.

Whistlestop Lagoon is located 3 miles northeast of Moss Landing Harbor. Upland habitats surround the mudflats, open water and marsh areas that characterize the immediate area, most of which are generally undeveloped as the ESNERR-managed area consists of 1,694 acres that are protected for long-term research, water quality monitoring, education, and coastal stewardship. The levee at Whistlestop dates to the late 1800s or early 1900s, when the area was first diked to provide upland access to a Southern Pacific Railroad freight platform running along the east side of the main Slough channel. The culverts were installed by the California Department of Fish and Game (CDFG) in the 1980s as part of a larger project to restore tidal flow in ESNERR's Parsons Complex and open the levee to the public as part of its five mile ESNERR trail system.

The existing Whistlestop levee is approximately 325 feet long. There are currently three culverts in the Whistlestop levee: a 36-inch diameter central culvert and two smaller, 24-inch diameter culverts located to the west and east of the larger culvert (See Exhibit 2). When functioning as designed, these culverts allow a maximum tidal range of about 50 centimeters inside the lagoon, or 20% of Elkhorn Slough's full tidal range. At this capacity, the culverts provide sufficient flushing to maintain generally acceptable water quality conditions and access to the lagoon by large fish; however, the culverts are not currently functioning as designed. In July 2010, the largest, central culvert broke inside the levee, and sinkholes have been forming over this culvert for several years. The smaller 24-inch culvert on the east side of the central culvert has also silted in, and sinkholes have begun to form on the levee in the general vicinity of the westernmost 24-inch culvert.

**Project History:** The project originated in response to failing infrastructure, and is consistent with the goals an ecosystem based management initiative that began in 2004. The Elkhorn Slough Tidal Wetland Project (TWP) has engaged over 100 scientists, agency staff, and elected officials in planning and implementing activities for the restoration of the physical processes that support the long-term vitality of the slough's estuarine habitats. Conservancy staff has participated on the Strategic Planning Team for the TWP.

In 2008, the Conservancy secured a \$200,000 grant from the U.S. Environmental Protection Agency and added \$100,000 of its own funds for planning the Parsons Slough Wetland Restoration Project, which included Whistlestop Lagoon. ESF staff approached the Conservancy in 2011 to request funds for repairing the levee in order to increase tidal range and circulation in Whistlestop Lagoon, improve habitat connectivity and fish and wildlife access between the lagoon and the adjacent Parsons Complex, and maintain public access to Hummingbird Island and the main channel of the estuary.

**PROJECT FINANCING**

<b>Coastal Conservancy</b>	\$404,162.00
Elkhorn Slough Foundation	<u>\$175,815.00</u>
<b>Total Project Costs</b>	\$579,997.00

The expected source for the Conservancy funds for this authorization is an appropriation to the Conservancy from the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006, “Proposition 84,” Public Resources Code Section 75001 *et seq.* Pursuant to Public Resources Code Section 75060, the Conservancy is authorized to use Proposition 84 funds for projects that protect beaches, bays, coastal waters and coastal watersheds, including projects that protect and restore the natural habitat values of coastal waters and lands, and that are consistent with the Conservancy’s enabling legislation at Division 21 of the Public Resources Code. Section 75060(e) of the Public Resources Code specifically allocates Conservancy funding for the protection of Monterey Bay and its watersheds, which is defined in Section 75072.5 to include the watersheds of those rivers and streams in Santa Cruz and Monterey Counties flowing to the Monterey Bay. The proposed project will protect and restore the natural habitat values of the Elkhorn Slough wetlands, benefiting coastal waters in the larger Slough complex, which flows to Monterey Bay. The proposed authorization is consistent with the Conservancy’s enabling legislation, as discussed in the “Consistency with Conservancy’s enabling legislation” section below.

Proposition 84 also requires that for potential projects that include acquisition or restoration for the purpose of protect natural resources protection, the Conservancy give priority to potential projects that meet one or more of the criteria specified in Public Resources Code Section 75071. The proposed project satisfies the following specified criteria: 2) Watershed protection – the project will contribute to the protection and restoration of the Elkhorn Slough watershed by improving water quality and protecting habitat for the benefit of the entire Elkhorn watershed, which is a priority watershed in the Central Coast, one of the major biological regions of the state as identified by the Resources Agency; and 4) Non-state matching contribution – ESF will provide \$175,815 toward the proposed project. ESF’s anticipated source of funds is a NOAA grant of funds pursuant to the American Recovery and Reinvestment Act. Accordingly, the proposed authorization is an appropriate use of Proposition 84 funds.

**CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:**

Conservancy funding of the proposed project is consistent with Chapter 6 (Sections 31251-31270) of the Conservancy’s enabling legislation, Division 21 of the Public Resources Code, regarding enhancement of coastal resources. Pursuant to Section 31251, the Conservancy may award grants to nonprofit organizations for the purpose of enhancement of coastal resources that, because of human-induced events, or incompatible land uses, have suffered loss of natural and scenic values. Such grants must be used for assembly of parcels of land, relocation of improvements or for other corrective measures that will enhance the natural and scenic character of the area. The proposed levee reconstruction and dock replacement are corrective measures

that are necessary to enhance the natural and scenic character of the Elkhorn Slough complex, which has been significantly degraded by historical diking and farming of the property.

Consistent with Section 31252, Elkhorn Slough has been identified in the Monterey County Local Coastal Program as requiring public action to resolve existing resource protection problems. Specifically, section 2.3.4.2 of the North Monterey County Local Coastal Program calls for all appropriate agencies to participate in the development and financing of a comprehensive wetland management plan for Elkhorn Slough, and for an agency to accept management responsibility for implementing the plan. CDFG, in partnership with ESF and NOAA have taken responsibility in implementing actions to manage the wetlands of Elkhorn Slough.

Section 31253 states that the Conservancy may provide up to the total cost of a coastal resource enhancement project. Consistent with Section 31253, the following factors were considered in determining the amount of Conservancy funding for this project: the total amount of funding available for coastal resource enhancement projects, the fiscal resources of the applicant, the urgency of the project, and the Conservancy's project selection criteria, as described in detail below, under the heading "Consistency With Conservancy's Project Selection Criteria & Guidelines." Conservancy funds would compose just over two thirds of project costs, with the additional funding provided by a grant through the American Recovery and Reinvestment Act through the National Oceanic and Atmospheric Administration (NOAA).

#### **CONSISTENCY WITH CONSERVANCY'S 2007 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):**

Consistent with **Goal 5, Objective B** of the Conservancy's 2007 Strategic Plan, the proposed project will enhance 14 acres of coastal wetlands.

Consistent with **Goal 6, Objective F**, the proposed project will improve water quality to benefit coastal resources by increasing tidal flushing of the lagoon.

#### **CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on November 10, 2011, in the following respects:

##### **Required Criteria**

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Support of the public:** project has the support of state and local elected officials including U.S. Congressman Sam Farr, Senator Sam Blakeslee, Assemblymember Bill Monning, Monterey County Supervisor Lou Calcagno, NOAA National Estuarine Reserve Division,

U.S. Fish and Wildlife Service, Department of Fish and Game, Department of Water Resources, and the Regional Water Quality Control Board. See Exhibit 3: Project Letters.

4. **Location:** The proposed project is located within the coastal zone of Monterey County.
5. **Need:** While Elkhorn Slough Foundation has obtained in-kind commitments and matching funds from NOAA, these alone are not sufficient. Conservancy assistance is needed at this point to enable the proposed project to move forward.
6. **Greater-than-local interest:** Elkhorn Slough is one of the most ecologically important and largest estuarine systems in California as signified by its designation as a National Estuarine Research Reserve. The proposed restoration will provide water quality and habitat benefits for the Elkhorn Slough complex, as well as enhance significant tidal wetland habitat for state and federally endangered species such as the threatened southern sea otter, the native Olympia oyster, bat rays, sharks, fish and other species of concern.
7. **Sea level rise vulnerability:** The project's vulnerability to sea level rise has been evaluated in the CDFG's Mitigated Negative Declaration (see Exhibit 3) and the project will be designed to have a useful life of at least 40 years. Elkhorn Slough has been the subject of numerous studies that include vulnerability assessments and ongoing monitoring of existing marsh conditions and conditions projected under various sea level rise scenarios. Like other estuaries, the Slough will be vulnerable to sea level rise and storm surges over the next 40 to 100 years. The project will be built to accommodate potential increases in sea level. The bridge will be installed at an elevation of 9.0 feet with gradual transition slopes from the existing levee top. Extreme high tides in Elkhorn Slough rarely exceed 7.0 feet. The 2.0 foot buffer will accommodate the amount of sea level rise anticipated over the life of the project. The bridge will be designed to withstand overtopping in extreme high tides.

The primary impact of sea level rise on the levee will be more frequent overtopping from storm surge, but the project will be designed to minimize the associated maintenance requirements. The wide opening at the bridge will allow the levee to be overtopped by rising waters that are the same elevation on both sides of the levee. This will allow the levee to be temporarily submerged without significant turbulence. While occasional maintenance of the levee surface will be required, the need for major repairs will be avoided.

The bridge element of the project may facilitate salt marsh migration in the face of rising sea levels. As water levels rise, marsh is expected to "drown" if elevation cannot keep pace with inundation, and marshes may need to shift upland to survive. Because of its generally steep topography and numerous man-made tidal barriers, there are few areas in the Elkhorn Slough watershed for marsh to migrate. The grasslands surrounding Whistlestop Lagoon represent some of the lowest elevation and gently sloping lands locally available for such migration. By reducing the level of tidal restriction in the Lagoon, this project may facilitate the migration and preservation of local salt marsh on ESNERR.

### **Additional Criteria**

8. **Urgency:** Without intervention, the levee is expected to fail within a year.
9. **Leverage:** See the "Project Financing" section above.



10. **Readiness:** ESF is ready to commence the proposed project this year.
11. **Realization of prior Conservancy goals:** The Conservancy has worked with ESF and other organizations for almost two decades to preserve and restore the resources of Elkhorn Slough. Tidal erosion and marsh loss within the Slough threaten the resources the Conservancy has worked hard to protect. The proposed project will enhance these resources and protect them from continued degradation. See also the “Project History” section, above.
12. **Minimization of greenhouse gas emissions:** The project was designed to minimize use of materials in order to have less impact on the landscape and on natural resources and is likely to have a minor effect from the perspective of atmospheric carbon. Construction is anticipated to generate approximately 8 tons of CO<sub>2</sub>, largely through fuel consumption in the production, delivery and placement of building materials. The project incorporates a variety of best management practices to reduce this impact. First, the project is small in size and construction activities would be relatively short in duration, thus the project would not be considered a major source of GHG emissions. Secondly, the use of local contractors and materials will reduce vehicle miles traveled. Although construction will involve the use of cement for wing walls and box culvert, the cement will be derived from local sources whenever possible. Rock rip-rap will likely be sourced from the Granite Rock Quarry in Aromas, less than 15 miles from the project site. According to ESNERR, it is unlikely that the contractors would come from further away than the San Francisco Bay area, based on records of suitable contractors and bidders on other projects. Thirdly, the project is efficiently located adjacent to the staging area. Finally, construction will avoid the use of heavy machinery where possible and the only machinery on site will be the minimum required for the project. The rest of the labor will be manual labor carried out by local contractors. Materials will be stored on site to minimize trips and sustainable methods and sustainably produced materials will be used whenever possible. The project is not expected to result in the increased sequestration of carbon. Some additional acreage of tidal marsh may be created, with increased carbon sequestered in that area, but some quantity of carbon stored in sediments may be released by the increased oxidation of soil organic matter in other areas. Local contractors and materials will be used whenever possible, minimizing vehicle miles traveled for the project, thereby minimizing greenhouse gas emissions. In summary, the project will minimize greenhouse gas emissions to the extent possible.

#### **CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:**

The proposed project is consistent with the following recommended actions or specific policies of the certified North Monterey County Local Coastal Program:

Section 2.3 defines environmentally sensitive habitats as “areas in which plant or animal life or their habitats are rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.” Section 2.3.1 states that environmentally sensitive habitats of North County “shall be protected, maintained, and where possible, enhanced and restored.” This project will facilitate enhancement and restoration of the Elkhorn Slough through a levee repair and lagoon enhancement project.

Section 2.3.3.B.5 states “all wetland areas of the north County Coastal Zone shall be protected and preserved for their plant and wildlife values, including but not limited to...Elkhorn Slough...”

Section 2.3.4.2 states that a comprehensive wetland management plan should be completed for Elkhorn Slough, and specifically calls for Coastal Conservancy participation in the management plan financing and development.

Section 2.3.4.5 states “the County shall encourage the restoration of sensitive plant habitats on public and private lands.”

The proposed project meets the goals of these LCP policies by carrying out one or more of the recommendations of the Elkhorn Slough Watershed Conservation Plans of 1989 and 1999 which identifies the loss of tidal marsh as a major conservation issue in the Elkhorn Slough watershed, and calls for restoration of wetland habitat where suitable. The Elkhorn Slough Watershed Conservation Plan was adopted by the Conservancy in December 1999.

### **COMPLIANCE WITH CEQA:**

As the lead agency for the proposed project, the California Department of Fish and Game (CDFG) adopted on June 4, 2012 the *Initial Study/Mitigated Negative Declaration (IS/MND)* (See Exhibit 3), pursuant to the California Environmental Quality Act (CEQA). The IS/MND addresses the potential environmental effects of the “Whistlestop Levee Repair and Public Access Improvement Project,” which is the proposed project. The IS/MND evaluated the proposed project actions and identified mitigation measures and alternatives to reduce potential adverse impacts.

The CDFG’s *IS/MND* identified three potentially significant but mitigable (Class II) project impacts on biological resources, cultural resources and hydrology/water quality. Mitigation measures were included to assure that these potential impacts will be eliminated or reduced to *less than significant levels*. The project’s Class II impacts and mitigation measures are described below:

#### Biological Resources:

Special status fish may be directly affected by increased sedimentation and turbidity, accidental spills, and use of hazardous materials during in-water construction (e.g., levee removal, bridge installation of wooden piles, placement of rock riprap). These impacts will be addressed by Mitigation Measures BIO-1 and BIO-2.

- i. Mitigation Measure BIO-1: The BMPs outlined in Table IV-2 (Exhibit 3, pages 51-54) will be implemented to minimize stormwater runoff, erosion, and potential water quality impacts associated with construction activities. In addition, contractors shall receive training regarding the environmental sensitivity of the site, the need to minimize impacts, and the implementation of stormwater BMPs for protection of water quality.
- ii. Mitigation Measure BIO-2: A designated biologist will be on-site daily while construction activities are taking place to (1) avoid adverse effects on special-status species, including fish, marine mammals, amphibians, and birds; (2) check for compliance with all mitigation and avoidance

measures; and (3) ensure that signs, stakes, and fenced areas are intact, and that human activities are restricted outside of these protective zones.

Amphibians may be affected by construction activities because personnel and vehicles would pass through upland habitat that is within one-mile of freshwater habitat known to support breeding populations of red-legged frog and Santa Cruz long-toed salamander. In addition, construction vehicles would pass within 10 feet of California red-legged frog non-breeding aquatic habitat used by juvenile frogs during project construction.

- iii. Mitigation Measure BIO-3: This measure includes seasonal avoidance of listed species and habitats, avoidance of night work, environmental awareness training, environmentally sensitive area fencing, wildlife exclusion fencing, burrow avoidance, access and staging measures, biological monitoring, daily inspection of trenches and fences, and restoration of disturbed habitat. Mitigation Measure BIO-2 would further reduce the potential or adverse effects on special-status species during construction.

Cultural Resources:

2) .

There are no known archaeological or historic resources in the APE. However, the cultural resources evaluation concluded that there remains a slight chance that buried archaeological resources, including human remains, could be uncovered if mechanical excavation would disturb previously undisturbed sediments. With implementation of Mitigation Measures V-1/(CUL-1), the potential impacts associated with disturbing buried archaeological deposits and human remains would be less than significant with mitigation.

Mitigation Measure V-1/(CUL-1): An archaeological monitor shall be retained to observe any mechanical excavation below the grade of the existing levee, and/or at the proposed staging area. The monitor would be responsible for identifying and retrieving any prehistoric archaeological materials uncovered for analysis, as appropriate (Exhibit 3, page 64).

Hydrology and Water Quality:

Construction activities and ground disturbance at the upland staging area have the potential to result in temporary, short-term increases in sedimentation rates and turbidity concentrations in channels downstream of the project area, which may adversely affect water quality and channel substrate composition. All in-water construction would occur during slack or rising tide to ensure that construction-related turbidity in Parsons Slough would be minimized. In addition, if a cofferdam is used to install the bridge, any water removed from the cofferdam would be pumped to a silt curtain in Whistlestop Lagoon to decant and filter the water before it is reintroduced into the water column. The BMPs provided in Mitigation Measure BIO-1 would be implemented to further reduce the effects of construction-related ground disturbance.

Although all in-water construction activities would be conducted using equipment staged in upland areas on the western and/or eastern edges of the existing levee (no heavy

equipment would enter channels), construction equipment could release contaminants such as oil, grease, and fuel into adjacent water bodies, which could degrade water quality and potentially violate water quality standards. This impact would also be reduced through implementation of the BMPs provided in Mitigation Measure BIO-1 (Exhibit 3, page 51).

The proposed construction methods in combination with Mitigation Measure BIO-1 would reduce this impact to *less than significant with mitigation*.

In addition, the IS/MND indicated that construction activities associated with the project would result in permanent fill of up to 0.50 acres of waters of the U.S. and State to facilitate construction of the bridge and associated infrastructure. Areas adjacent to the project footprint could also be temporarily disturbed during construction. Specifically, up to 0.29 acre of waters of the U.S., including 0.03 acre of emergent salt marsh and seasonal wetland and 0.26 acre of tidal waters, would be permanently filled as a result of levee improvements and placement of rock-rip rap under the proposed bridge. If a sill is constructed under the bridge, the area of permanent fill would increase to approximately 0.50 acre to accommodate the side slopes of the embankment. In addition, areas adjacent to the project footprint (primarily tidal waters) could be temporarily disturbed during construction. The IS/MND concluded that this effect would be less than significant because the small proportion of area lost would not appreciably diminish the overall function or habitat value of the area. ESF has since explained that the final overlay of the design drawings on the wetland delineation map indicates the project would result in fill of 0.313 acre of waters of the U.S., consisting of 0.035 acre of wetlands and 0.278 acre of tidal waters; and that these impacts are mitigated by the improved drainage from Whistlestop Lagoon that will occur upon completion of the project. This improved drainage will increase the area of intertidal mudflat (from subtidal habitat) by over 9 acres, which will benefit natural communities and more closely reflect historic habitat conditions that were present in Whistlestop Lagoon prior to construction of the levee.

CDFG adopted a mitigation monitoring or reporting plan (MMRP) on June 4, 2012. This plan will ensure that the previously described mitigation measures are implemented.

As a responsible agency, the Conservancy staff has independently reviewed the CDFG's Mitigation Negative Declaration, adopted by it on June 4, 2012, and recommends that the Conservancy find that the project, as designed and mitigated will not have a significant adverse effect on the environment. Upon approval, staff will file a Notice of Determination for the project.